



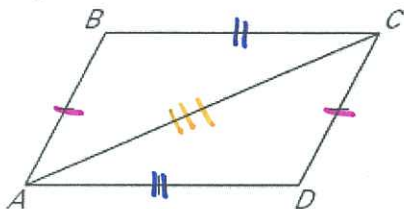
Name: _____
 Mr. Tiénou-Gustafson & Mr. Bielmeier
 Geometry, Period _____
 Due Date: Mon, 9 Feb 2015

HW97_AllTriangleCongruence

**Geometry
Homework**

For each problem below, use a 2-column proof (S | R). All congruence postulates & theorems are used.

1a) PROVE: $\triangle ABC \cong \triangle CDA$

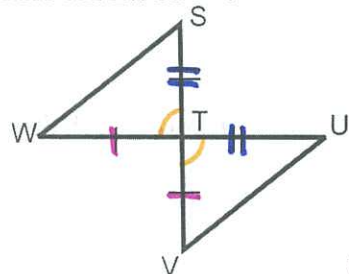


Statement	Reason
1.	given
2.	given
3.	same line
4.	

1b) If $m\angle B = 100^\circ$, what is the sum of $\angle BCA$ and $\angle ACD$? _____

2a) GIVEN: $m\angle W = 38^\circ$, $m\angle S = 52^\circ$

PROVE: $\triangle WTS \cong \triangle VTS$

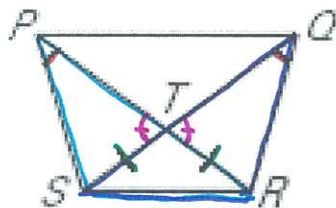


Statement	Reason
1. $\overline{WT} \cong \overline{VT}$	given
2.	
3. $\angle WTS \cong \angle VTS$	
4. $\triangle WTS \cong \triangle VTS$	

2b) If $\overline{ST} = 3$ and $\overline{TW} = 4$, then $\overline{WS} = ?$ _____

3a) GIVEN: Markings in the diagram

PROVE: $\triangle PTS \cong \triangle QTR$

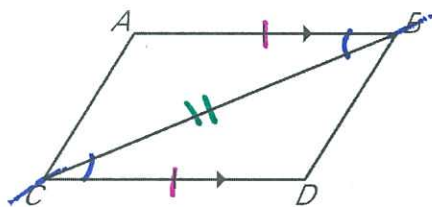


Statement	Reason
1. $\angle SPT \cong \angle RQS$	
2. $\overline{PT} \cong \overline{QT}$	given
3.	vertical angles
4.	

3b) If $m\angle PTQ = 100^\circ$, find $m\angle TSR$: _____

4a) GIVEN: $\overline{AB} \parallel \overline{CD}$, $\overline{AB} \cong \overline{CD}$

PROVE: $\triangle ABC \cong \triangle DCB$

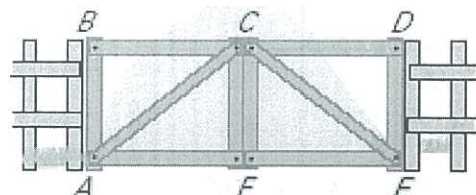


Statement	Reason
1.	given
2.	same line
3.	opposite interior angles
4.	

4b) Since $\overline{AB} \parallel \overline{CD}$, then BD is called a _____, and $\angle ABD$ and $\angle CDB$ are _____.

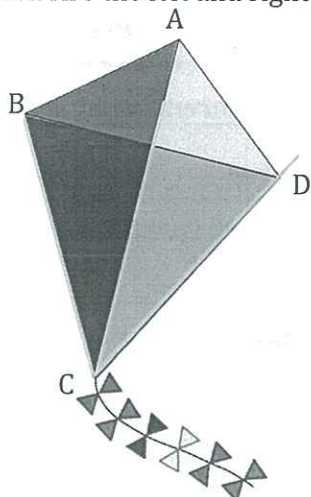
5a) Given: $\triangle AFC = \triangle EFC$, ABDE is a rectangle

Prove: $\triangle ABC \cong \triangle EDC$



5b) if $\angle CAF = 3x + 8$ and $\angle ACF = 4x - 2$, which angle is bigger? _____ By how much? _____

- 68) **GIVEN:** Line segment AC bisects both angles A and C in the kite below.
PROVE: Are the left and right sides of the kite congruent?



- 69) If the height of the kite (AC) is 15 inches, and the width (BD) is 8 inches, what is its area? _____

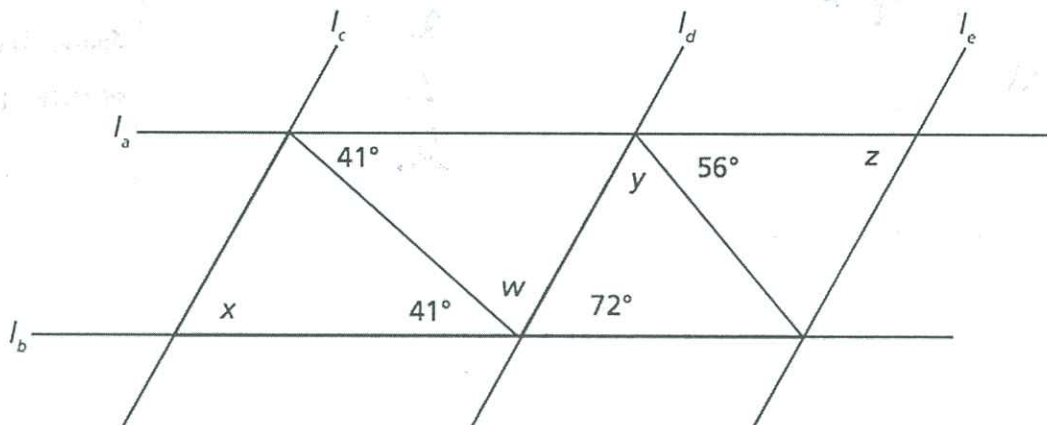
You should approach each problem as an exploration. Problem-solving requires persistence as much as it requires ingenuity. When you get stuck, or solve a problem incorrectly, back up and start over. Keep in mind that you're probably not the only one who is stuck, and that may even include your teacher. **If you have taken the time to think about a problem, you should bring to class a written record of your efforts, not just a blank space in your notebook.** The methods that you use to solve a problem, the corrections that you make in your approach, the means by which you test the validity of your solutions, and your ability to communicate ideas are just as important as getting the correct answer.

Solve all of the problems in your graph paper notebook neatly labeled! If you are stuck and cannot answer a question, write at least three complete sentences about the problem and what you do know. Use at least one of the sentence starters below:

- Even though I am stuck, I do know...and I think I should...because...
- I am stuck because I do not know what _____ means. I think it means...so I tried...
- I got this answer but I think it is wrong because...

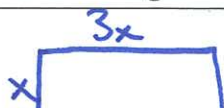
Remember that you can always use old notes, a dictionary, math textbook, and/or look up topics online!

- 1) Find every angle represented by a variable and the relationship used to find the angle.
 l_c , l_d , and l_e are parallel. l_b and l_a are also parallel.



- 2) The width of a rectangle is three times the length. If the perimeter is 108,
a) find the length and the width of the rectangle and b) find the area of the rectangle.

if $l = x$
then $w = 3x$



Define Your Pride. 🐾